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Jerrell P. Hein

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DAVIS & ASSOCIATES

P.O. BOX 1093

DRIPPING SPRINGS, TX 78620

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JERRELL P. HEIN and  
MARIUS GOLDENBERG

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Appeal 2009-001,026  
Application 09/608,743  
Technology Center 2600

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Decided: August 28, 2009

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Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI and  
KARL D. EASTHOM, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 of the final rejection of claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18.<sup>1</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We affirm the Examiner's rejection of these claims.

### INVENTION

The invention is directed to a subscriber line interface circuit that contains a common base audio isolation stage in order to eliminate high precision high voltage amplifiers that are usually required to process voiceband signals. *See generally* Specification 1-4. Claim 1 is representative of the invention and reproduced below:

1. A method comprising the steps of:
  - (a) receiving an outgoing audio signal; and
  - (b) coupling the audio signal to a subscriber line through a plurality of transistors coupled in a common base configuration; and
  - (c) receiving linefeed driver control signals for controlling battery feed to the subscriber line, wherein the audio signal and the linefeed driver control signals are received as currents on the same signal lines.

### REFERENCES

Robe	US 4,151,482	Apr. 24, 1979
Pryor	US 4,284,958	Aug. 18, 1981
Rosch	US 5,274,702	Dec. 28, 1993

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<sup>1</sup> Claims 2, 4, 8, 11, and 17 were cancelled in the Amendment After Non-Final Rejection filed July 13, 2006. The Examiner indicated claims 13, 14, 19, and 20 as containing allowable subject matter in the Non-Final Rejection mailed Feb. 9, 2006.

### REJECTIONS AT ISSUE

The Examiner rejected claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Rosch in view of Robe. Ans. 3-10.

The Examiner rejected claims 1, 5, 9, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Rosch in view of Pryor. Ans. 10-15.

### ISSUES

*Rejection of claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 under 35 U.S.C. § 103(a) as unpatentable over Rosch in view of Robe*

*Claims 1, 5, 9, and 15*

Appellants argue on pages 5-10 of the Appeal Brief that the Examiner's rejection of claims 1, 5, 9, and 15 is in error. We select independent claim 1 as representative of the group comprising claims 1, 5, 9, and 15 since Appellants do not separately argue any of the claims with particularity. 37 C.F.R. § 41.37(c)(1)(vii). Appellants argue that neither Rosch nor Robe teaches coupling an audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration. App. Br. 7. Appellants additionally argue that neither reference teaches receiving the audio signal or the linefeed driver control signals as currents. App. Br. 8. Finally, Appellants argue that there is no motivation to combine the two references. App. Br. 9.

Thus, with respect to claims 1, 5, 9, and 15 Appellants' contentions present us with three issues: (1) Have Appellants shown that the Examiner erred in finding that Rosch in view of Robe teaches coupling an audio signal

to the subscriber line through a plurality of transistors coupled in a common base configuration? (2) Have Appellants shown that the Examiner erred in finding that Rosch in view of Robe teaches receiving the audio signal or the linefeed driver control signals as currents? (3) Have Appellants shown that the Examiner erred in finding motivation to combine Rosch with Robe?

*Claims 3, 6-7, 10, 12, 16, and 18*

Appellants argue on page 10 of the Appeal Brief that claims 3, 6-7, 10, 12, 16, and 18 are allowable for the same reasons as claims 1, 5, 9, and 15 are allowable.

Thus, Appellants' arguments with respect to the Examiner's rejection of claims 3, 6-7, 10, 12, 16, and 18 present us with the same issues as claims 1, 5, 9, and 15.

*Rejection of claims 1, 5, 9, and 15 under 35 U.S.C. § 103(a) as unpatentable over Rosch in view of Pryor*

Appellants argue on pages 5-10 of the Appeal Brief that the Examiner's rejection of claims 1, 5, 9, and 15 is in error. Appellants argue that neither Rosch nor Pryor teaches coupling an audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration. App. Br. 7. Appellants additionally argue that neither reference teaches receiving the audio signal or the linefeed driver control signals as currents. App. Br. 8. Finally, Appellants argue that there is no motivation to combine the two references. App. Br. 9.

Thus, with respect to claims 1, 5, 9, and 15 Appellants' contentions present us with three issues: (1) Have Appellants shown that the Examiner erred in finding that Rosch in view of Pryor teaches coupling an audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration? (2) Have Appellants shown that the Examiner erred in finding that Rosch in view of Pryor teaches receiving the audio signal or the linefeed driver control signals as currents? (3) Have Appellants shown that the Examiner erred in finding motivation to combine Rosch with Pryor?

## FINDINGS OF FACT

### *Rosch*

1. Rosch teaches line interface circuits connected to subscriber lines for telecommunications. Col. 1, ll. 5-10.
2. Part of the transmission interface is formed by the combination of a signal coupling circuit and a line drive circuit. Col. 9, ll. 42-48 and Fig. 3.
3. The signal coupling circuit is connected to the tip wire and the ring wire of the line drive circuit through two d.c. buffer amplifiers. Col. 10, ll. 18-21 and Fig. 3.
4. The outputs of the amplifiers provide unity gain since they are connected to their inverting inputs. This is done so that the amplifiers have minimum output impedance and a maximum bandwidth. Col. 10, ll. 21-25 and Fig. 3.
5. However, even though the amplifiers need not produce unity gain, it is desirable to keep the gain small so that it approximates to unity. Col. 10, ll. 35-38.

*Robe*

6. Robe discloses an operational amplifier. Col. 2, ll. 32-34 and Fig. 1.
7. The amplifier contains a plurality of transistors (Q3 and Q4) that share a common base. Fig. 1.
8. The output of the amplifier is connected to the inverting input of the amplifier while also producing an output. Col. 2, ll. 42-46 and Fig. 1.

*Pryor*

9. Pryor discloses a differential-input amplifier that receives two inputs. Col. 3, ll. 12-15 and Fig. 2.
10. The amplifier contains transistors that share a common base (N<sub>6</sub> and P<sub>6</sub>; N<sub>7</sub> and P<sub>7</sub>). Col. 3, ll. 36-46.

PRINCIPLES OF LAW

Office personnel must rely on Appellant's disclosure to properly determine the meaning of the terms used in the claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc). "[I]nterpreting what is *meant* by a word *in* a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." *In re Cruciferous Sprout Litigation*, 301 F.3d 1343, 1348 (Fed. Cir. 2002) (internal quotation marks and citations omitted; emphasis in original).

On the issue of obviousness, the Supreme Court has stated that "[t]he combination of familiar elements according to known methods is likely to be

obvious when it does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. . . . [A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

*Id.* at 417. “One of the ways in which a patent’s subject matter can be proved obvious is by noting that there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent’s claims.” *Id.* at 419-420.

The Examiner bears the initial burden of presenting a prima facie case of obviousness, and Appellant has the burden of presenting a rebuttal to the prima facie case. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). Appellant has the burden, on appeal to the Board, to demonstrate error in the Examiner’s position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006).



## ANALYSIS

*Rejection of claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 under 35 U.S.C. § 103(a) as unpatentable over Rosch in view of Robe*

*Claims 1, 5, 9, and 15*

Appellants' arguments have not persuaded us of error in the Examiner's rejection of claims 1, 5, 9, and 15. Appellants argue that neither of the references teaches "*coupling the audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration.*" App. Br. 7. Appellants argue that Rosch does not teach transistors in a common base configuration and that Robe teaches that the common base amplifier stage is a voltage amplifier and not a current amplifier. App. Br. 7. While it is true that Rosch does not teach transistors in a common base configuration, it is the combination of Rosch with Robe that does teach the claim limitation.

Rosch teaches a signal coupling circuit and a line drive circuit that together form a transmission interface. FF 1, 2. The signal coupling circuit is connected to the tip wire and ring wire of the line drive circuit through two d.c. buffer amplifiers. FF 3. Therefore, Rosch teaches coupling the audio signal to a subscriber line. As noted by the Examiner, Rosch does not specifically teach a plurality of transistors in a common base configuration. Ans. 5. However, the Examiner finds that Robe discloses this limitation. Ans. 6.

Robe discloses an operational amplifier. FF 6. The amplifier contains two inputs and a single output. FF 8. In addition, the amplifier contains a plurality of transistors (Q3 and Q4) that share a common base. FF 7.

Therefore, by replacing Rosch's d.c. buffer amplifiers with Robe's amplifiers that contain a plurality of transistors that share a common base, the above argued claim limitations are met.

Claim 1 additionally states "wherein the audio signal and the linefeed driver control signals are received as currents on the same signal lines." Appellants argue that none of the references disclose either the audio signals or the linefeed driver control signals as currents. App. Br. 8. The Examiner has found that Rosch teaches the claimed limitation since Rosch teaches receiving an outgoing signal Rx via a receive line, wherein the signal Rx is a voiceband signal. Ans. 4. Appellants' statement merely concludes that this finding is in error without citing evidence or further explanation. We consider such a conclusory assertion without supporting explanation or analysis particularly pointing out errors in the Examiner's reasoning to fall short of persuasively rebutting the Examiner's prima facie case of obviousness. *See Oetiker*, 977 F.2d at 1445.

Appellants additionally argue that there is no suggestion to combine the references for several reasons. App. Br. 9. First, Appellants mistakenly argue that Rosch teaches unity gain or greater for its amplifier stages. App. Br. 7. While Rosch discloses that the amplifiers provide unity gain in order to obtain maximum output impedance and maximum bandwidth, there is no indication that Rosch teaches that the amplifiers provide greater than unity gain. FF 4, 5. In fact, Rosch discloses that the amplifiers need not necessarily have unity gain but the gain is desirably kept small. FF 5. This indicates that the gain is unity or may even be less. Even so, Appellants have not provided sufficient evidence to support the statement that common base transistor amplifier stages must provide less than unity gain. In the

absence of sufficient evidence, we do not find Appellants' argument to be persuasive.

Second, Appellants argue that the substitution of Robe's amplifiers with Rosch's amplifiers would require "additional biasing voltages [and] additional voltage divider loads for feedback." App. Br. 9. Appellants have not provided any further explanation or evidence as to why this is so. We consider such a conclusory assertion without supporting explanation or analysis particularly pointing out errors in the Examiner's reasoning to fall short of persuasively rebutting the Examiner's prima facie case of obviousness. *See Oetiker*, 977 F.2d at 1445.

Once the Examiner has satisfied the burden of presenting a prima facie case of obviousness, the burden then shifts to Appellants to present evidence and/or arguments that persuasively rebut the Examiner's prima facie case. *Id.* Since Appellants did not particularly point out errors in the Examiner's reasoning to persuasively rebut the Examiner's prima facie case of obviousness, the rejection of claims 1, 5, 9, and 15 is therefore sustained.

*Claims 3, 6-7, 10, 12, 16, and 18*

Appellants' arguments have not persuaded us of error in the Examiner's rejection of claims 3, 6-7, 10, 12, 16, and 18. Claim 3 is dependent upon claim 1, claims 6-7 are dependent upon claim 5, claims 10 and 12 are dependent upon claim 9, and claims 16 and 18 are dependent upon claim 15. Appellants present similar arguments for claims 3, 6-7, 10, 12, 16, and 18 as for claims 1, 5, 9, and 15. App. Br. 10. As discussed above, the arguments with respect to claims 1, 5, 9, and 15 are not found to be persuasive and therefore the similar arguments presented with respect to

claims 3, 6-7, 10, 12, 16, and 18 are also not found to be persuasive of error. Thus, we sustain the Examiner's rejection of claims 3, 6-7, 10, 12, 16, and 18.

*Rejection of claims 1, 5, 9, and 15 under 35 U.S.C. § 103(a) as unpatentable over Rosch in view of Pryor*

Appellants' arguments have not persuaded us of error in the Examiner's rejection of claims 1, 5, 9, and 15. Appellants present similar arguments for the rejection of claims 1, 5, 9, and 15 over Rosch in view of Robe. As discussed above, the similar arguments with respect to Rosch in view of Robe are not found to be persuasive of error. Pryor is similar to Robe in that it also teaches a differential amplifier which contains transistors that share a common base. As we were not persuaded by arguments directed to these features of Robe, we are similarly not persuaded that the combined teachings of Rosch and Pryor do not teach coupling an audio signal to a subscriber line as recited in claim 1.

Appellants' additional argument that there is no motivation to combine Pryor with Rosch is similarly not persuasive. App. Br. 10. The Supreme Court found that a teaching, suggestion, or motivation to combine the references was not required. *KSR*, 550 U.S. at 419. The Court characterized the TSM test merely as "helpful insight." *Id.* at 419. In *KSR*, the Supreme Court has stated that "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 550 U.S. at 416. The combination of Rosch with Pryor would yield predictable results.

As stated above, Rosch discloses amplifiers used in telephone communications circuitry. FF 1. Pryor discloses a differential-input amplifier. FF 9. Therefore, we consider using Pryor's amplifier in place of Rosch's amplifiers to be nothing more than using a known device to perform its known function. As such, the combination is obvious.

Even if the TSM test was still required, the Examiner has provided a motivation to combine the references. Ans. 12. The Examiner stated, on page 12 of the Answer, that the combination would provide a known configuration of an amplifier in place of an unspecified type of amplifier. Ans. 12. Appellants merely argue that there is no motivation because there is nothing to suggest the combination. App. Br. 10. Therefore, Appellants' argument has not identified an error in the Examiner's reasoning as to why the skilled artisan would have combined the teachings. In the absence of such argument and evidence, the Examiner's finding that a skilled artisan would have combined the references is sufficient as the Examiner has established that the combination is a predictable use of prior art elements according to their established functions.

Therefore, for the reasons stated above, we sustain the Examiner's rejection of claims 1, 5, 9, and 15.

### CONCLUSIONS OF LAW

Appellants have not shown that the Examiner erred in finding that Rosch in view of Robe teaches coupling an audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration.

Appellants have not shown that the Examiner erred in finding that Rosch in view of Robe teaches receiving the audio signal or the linefeed driver control signals as currents.

Appellants have not shown that the Examiner erred in finding motivation to combine Rosch with Robe.

Appellants have not shown that the Examiner erred in finding that Rosch in view of Pryor teaches coupling an audio signal to the subscriber line through a plurality of transistors coupled in a common base configuration.

Appellants have not shown that the Examiner erred in finding that Rosch in view of Pryor teaches receiving the audio signal or the linefeed driver control signals as currents.

Appellants have not shown that the Examiner erred in finding motivation to combine Rosch with Pryor.

SUMMARY

The decision of the Examiner to reject claims 1, 3, 5-7, 9, 10, 12, 15, 16, and 18 is affirmed.

No period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

ELD

DAVIS & ASSOCIATES  
P.O. BOX 1093  
DRIPPING SPRINGS, TX 78620